



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: 1500 BUREAU FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,477	01/02/2002	Yoshihiro Takai	18721-7053	5209
23639	7590	11/17/2003		
BINGHAM, MCCUTCHEN LLP THREE EMBARCADERO, SUITE 1800 SAN FRANCISCO, CA 94111-4067			EXAMINER CHURCH, CRAIG E	
			ART UNIT 2882	PAPER NUMBER

DATE MAILED: 11/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/037,477	TAKAI ET AL.	
	Examiner	Art Unit	
	Craig E. Church	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Virtual Reality

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In an event, however, any reply must be filed within SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (37 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of the communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on \_\_\_\_\_.  
2a)  This action is **FINAL**.                            2b)  This action is non-final.  
3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### **Disposition of Claims**

4)  Claim(s) 1-33 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-33 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.  
13)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a)  The translation of the foreign language provisional application has been received.  
14)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

1)  Notice of References Cited (PTO-892) 4)  Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948) 5)  Notice of Informal Patent Application (PTO-152)  
3)  Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6)  Other: \_\_\_\_\_

**Claims 31-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 31-33 contradict claim 1 from which they depend. While it is realized that the position of a tumor may be tracked by observing anatomical features per se, claim 1 explicitly calls for a “marker” which is taught to be an element foreign to the object being irradiated and not the object itself. If applicant wishes to claim this limitation, it should be done in an independent claim.**

**The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:**

**A person shall be entitled to a patent unless –**

**(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.**

**(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.**

**Claims 1-7, 9-19, 21-28 and 31-33 are rejected under 35 U.S.C. 102(a) as being anticipated by Kunieda et al (6307914). Kunieda teaches a pursuing (tracking) radiation therapy system comprising a therapy x-ray beam generating LINAC 15, patient support couch 20 (called a base), first and second x-ray imaging systems 21a-f and 22a-f, markers 17 indicating tumor location, data**

processing means 24-32 for receiving data from the imaging systems and determining the dynamic location of the tumor and various controllers for adjusting the therapy apparatus in response to the detected tumor position. Lines 15-28 of column 9 explain such control includes gating source 15 on and off. Line 59 of column 15 to line 11 of column 16 teach that such control includes moving the patient couch (base). Lines 14-36 of column 16 mention that such control includes adjusting a multilead collimator 15a. Lines 59-62 of column 11 reveal that the markers may be of various shapes and may be implanted in the patient. Lines 40-62 of column 16 suggest the use of multiple markers, and lines 36-51 of column 17 describe markers on the exterior surface of the patient which are imaged by TV cameras 1 and 2.

Claim 29 is rejected under 35 U.S.C. 102(e) as being anticipated by Mostafavi (6307914). Mostafavi teaches a method of gating therapeutic radiation based on the phase of physiological movement within a patient. See the abstract. Motion is sensed by imaging markers placed on the patient being treated.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mostafavi in view of Kunieda. While Mostafavi's markers are positioned outside the patient, Kunieda teaches substituting internal markers for external markers, and it would have been obvious to practice the Mostafavi invention with internal markers in order to improve accuracy of treatment.**

**Claims 8 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunieda in view of Cosman (6459769). Cosman discloses radiation therapy apparatus comprising first 12/16 and second 20/24 multileaf collimators, and it would have been obvious to equip the Kunieda device with a second MLC as taught by Cosman to enhance its ability to shape and control the therapy beam.**

**Any inquiry concerning this communication should be directed to Craig E. Church at telephone number 703-308-4861.**



**Craig E. Church  
Senior Examiner  
Art Unit 2882**